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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/585,072	06/01/2000	Gavriel Vexler	736.321US01	5741

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WOLF GREENFIELD & SACKS, PC
FEDERAL RESERVE PLAZA
600 ATLANTIC AVENUE
BOSTON, MA 02210-2211

EXAMINER

MAYO III, WILLIAM H

ART UNIT	PAPER NUMBER
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2831

DATE MAILED: 06/04/2002

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/585,072

Applicant(s)

VEXLER ET AL.

Examiner

William H. Mayo III

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-5,7,10,11,14 and 15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,7,10,11,14 and 15 is/are rejected.
- 7) ☒ Claim(s) 6,8,9,12,13 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 05 September 2000 is: a) ☐ approved b) ☒ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>12</u> | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed January 28, 2002 has been considered, however it fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance for some of the foreign patents, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but some of the foreign patent information referred to therein has not been considered.

Drawings

2. The corrected or substitute drawings were received on September 5, 2000. These drawings are not approved.

3. The drawings are objected to because Figures 1-2b and 4a-5b lack the proper cross-hatching which indicates the type of materials which may be in an invention. Specifically, the cross-hatching to indicate the conductor and insulation materials is improperly cross-hatched. The applicant should refer to MPEP Section 608.02 for the proper cross-hatching of materials.

4. Applicant is required to submit a proposed drawing correction in reply to this Office action. However, formal correction of the noted defect may be deferred until after

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the examiner has considered the proposed drawing correction. Failure to timely submit the proposed drawing correction will result in the abandonment of the application.

Correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1, 3-5, 7, 10-11, and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gagnon (Pat Num. 5,841,072) in view of Brorein et al (Pat Num. 5,767,441, herein referred to as Brorein). Gagnon discloses a twisted pair cable (Figs 1-2) for transmitting high frequency signals (abstract). Specifically, with respect to claim 1, Gagnon discloses a twisted pair cable (20) comprising a plurality of twisted pairs (Fig

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2) wherein the pairs comprise two conductors (21) surrounded by an inner layer insulator (22) and an outer layer insulator (23), wherein the two conductors (21) surrounded by an inner layer insulator (22) and an outer layer insulator (23). With respect to claim 3, Gagnon discloses a twisted pair cable (20) comprising a plurality of twisted pairs (Fig 2) wherein the pairs comprise two conductors (21) surrounded by an inner layer insulator (22) and an outer layer insulator (23) defining an outer surface. With respect to claim 5, Gagnon discloses that the inner layer insulator (22) is an extrudable polymer (Col. 3 & 4, lines 64-67 & 1). With respect to claim 7, Gagnon discloses that the outer layer insulator (23) is an extrudable polymer (i.e. FEP). With respect to claim 10, Gagnon discloses that the outer layer insulator (23) is an extrudable polymer (i.e. FEP) which may have flame retardant additives (Col. 5, see Table 2) such as HALFR. With respect to claim 14, Gagnon discloses that the inner insulator layer (22) and the outer insulator layer (23) are foamed (Col. 3 & 4, lines 64-67 & 1 respectively i.e. FEP is formed by cross-linking with additive to foam it during the extrusion process). With respect to claim 15, Gagnon discloses that the outer layer (23) insulator is larger than the inner layer insulator (22, Figs 1-2)

However, Gagnon doesn't necessarily disclose the conductors being eccentric with respect to the inner and outer insulators wherein the conductors being separated by a distance of S1 which is smaller than the separation S2 of the conductors in adjacent pairs (claim 1), nor the conductors being asymmetric such that the conductors are closer to each other than to the conductors in adjacent pairs in contact at the outer surface opposite the conductors (claim 3), nor the conductors being closer to each other

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than to an outer surface opposite the conductors (claim 4), nor the outer insulator being an extrudable elastomer (claims 5 & 10), nor outer insulator being an extrudable elastomer (claims 7, 11, & 14), nor the elastomer thickness being greater than 15 % of the overall insulation thickness (claim 15).

Brorein teaches an electrical cable (Fig 3d) for transmitting digital and analog data signals (Col. 1, lines 6-10). Specifically, with respect to claim 1, Brorein teaches a electrical cable (Figs 2D) comprising a plurality of twisted pairs (30 & 40 of both pairs) having a two conductors (60 & 70) that may have the construction as shown in Figure 3d (Col 11 & 12, lines 67-68 & 1-13), which shown the conductors (82) being eccentric with respect to the insulation (as shown in Fig 3D) for the purpose of providing a cable that processes superior transmission properties, including minimal structural return loss, near-end cross-talk, and insertion loss (Col. 1, lines 6-16), wherein the two conductors (82, Fig 3) which are separated by a distance (S1) which is smaller than the separation S2 of conductors (not number) in adjacent pairs (see details Fig 3D). With respect to claim 3, Brorein teaches that the conductors (82) are asymmetric such that the conductors (second horizontal conductors from left) are closer to each other than to the conductors (fourth horizontal conductors from left) in adjacent pairs (Col. 11, lines 20-38). With respect to claim 4, Brorein teaches that the conductors (82) are asymmetric such that the conductors (second horizontal conductors from left) are closer to each other than to the conductors (fourth horizontal conductors from left) in adjacent pairs (Col. 11, lines 20-38).

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With respect to claims 1-4, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the cable of Gagnon to comprise the conductor configuration as taught by Brorein because Brorein teaches that such a configuration provides a cable that processes superior transmission properties, including minimal structural return loss, near-end cross-talk, and insertion loss (Col. 1, lines 6-16).

With respect to claims 7, 10-11, and 14, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the cable of Norris to comprises an inner and outer insulator made of an extrudable elastomer, since it is well known in the art of cables that extrudable elastomers, such as EPDM, neoprene, and silicone rubber, are commonly used as cable insulators because of their flexibility and there ability to resistance fluid wicking thereby protecting cables for external forces and elements.

With respect to claim 15, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the cable of Gagnon to comprise the outer layer insulation having a thickness being greater than 15 % of the overall insulation thickness, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Allowable Subject Matter

8. Claims 6, 8-9, 12-13, and 16 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: This invention deals with a twisted pair cable comprising an extrudable polymer having a modulus of elasticity greater than 64 KPSI at room temperature, a dielectric constant lower than 2.5, and a loss factor lower than 0.0003 between 1Mhz and 1Ghz (claims 6 & 8) and the extrudable elastomer having a modulus of elasticity lower than 35 KPSI at room temperature (claims 6, 8, & 13), a conductor comprising a middle layer insulator between an inner and outer layer insulator (claim 9), and a method of making a twisted pair cable comprising an extrudable polymer having a modulus of elasticity greater than 64 KPSI at room temperature and an extrudable elastomer having a modulus of elasticity lower than 35 KPSI at room temperature (claim 16).

10. Claim 12 is depend upon claim 9 and is therefore objected.

Response to Arguments

11. Applicant's arguments filed April 10, 2002 have been fully considered but they are not persuasive. The applicant argues the following:

- A) Brorein doesn't show a multitude of twisted pairs in Figure 3d, but shows cross sections views of a single pair and therefore doesn't disclose or

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suggest the limitation of the separation distance S1 being smaller than separation distance S2.

- B) Brorein doesn't depict, nor disclose the spacing of the conductors being closer to each other than conductors in adjacent pairs.

With respect to argument A, the examiner respectfully traverses. The examiner agrees that Figure 3d depicts various cross sections of a single twisted pair. However, Brorein clearly discloses in Figure 2d, two adjacent conductor pairs that may have the configuration of the conductor pair shown in Figure 3d. Specifically, Brorein discloses in Col 12, lines 8-13, when describing Figure 2d,

"As an alternative, each of the individual wires could be pre-twisted in opposite directions from one another, so that after being paired on a pairing machine that imparts back twist, the end result is a cable pair having characteristics similar to the embodiment illustrated in Figs 3B-3D."

Brorein also goes on to state that

"The cable pairs may be used alone or in combination with other cable pairs that may or may not have been paired in the same manner"

Therefore, the adjacent conductor pairs may have the same configuration as shown in Figure 3d. Figure 3d clearly illustrates one conductor pair having different separation distances. Therefore, if the two adjacent conductor pairs are rotated as shown in Figure 3d, then clearly as shown in Figure 3, a first conductor pair will have a separation distance of S1 between the two conductors within the pair and a second conductor pair will have a separation distance, at some point during the rotation, of S2, wherein as shown in the drawing, wherein the distance (S1) is smaller than the

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separation S2. While the applicant also makes the argument, that no parameters are actually stated in the specification of Brorein, clearly the drawings, which is part of the disclosure, illustrate the two separation distances being different and it has been held that the drawings must be evaluated for what they reasonably disclose and suggest to one of ordinary skill in the art. In re Aslanian, 590 F. 2d 911, 200 USPQ 500 (CCPA 1979). In light of the above comments, the examiner respectfully submits that the 35 USC 103 rejection is proper and just.

With respect to argument B, the examiner respectfully traverses. As disclosed in the rebuttal of argument A, and the rejection of the claims above, clearly the drawings, which is part of the disclosure, illustrate the two separation distances being different, wherein one distance between two conductors appear to be closer and at some point upon rotation two conductors, appear to be farther spaced. It has been held that the drawings must be evaluated for what they reasonably disclose and suggest to one of ordinary skill in the art. In re Aslanian, 590 F. 2d 911, 200 USPQ 500 (CCPA 1979). In light of the above comments, the examiner respectfully submits that the 35 USC 103 rejection is proper and just.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. It is Walling et al (Pat Num 6,272,828), which discloses conductors being eccentric.

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13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Communication

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Mayo III whose telephone number is (703) 306-9061. The examiner can normally be reached on M-F 8:30 a. m. -6:00 p.m. (alternating Friday's off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on (703) 308-3682. The fax phone numbers

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for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

WHM III
April 7, 2001

A handwritten signature in black ink, reading "Dean A. Reichard" followed by the date "6/3/02". The signature is written in a cursive, flowing style.

DEAN A. REICHARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800